

Fig. 1

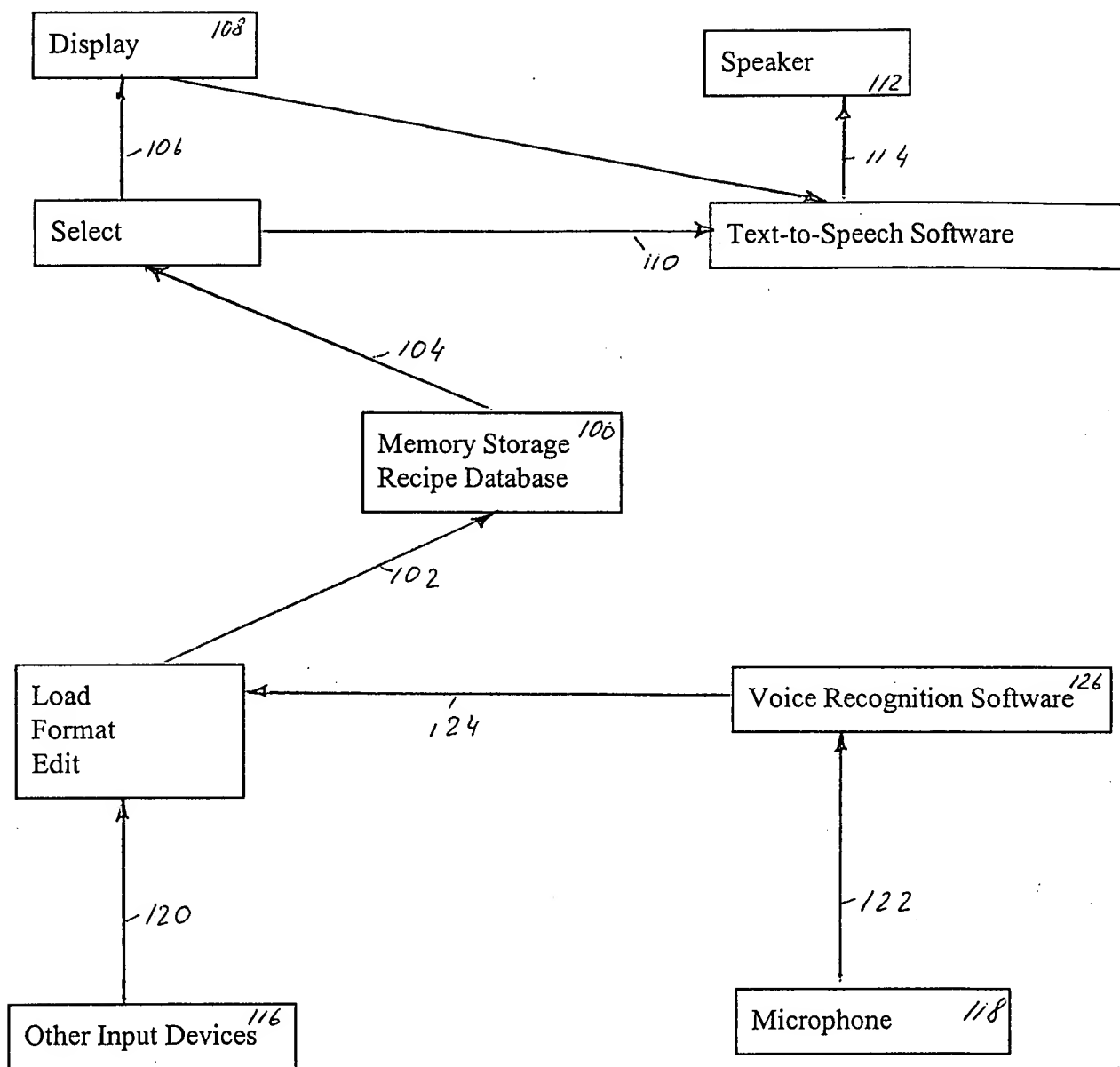


Fig. 2

The Talking Cookbook Data Base Design

**Files**

Recipe Header  
Recipe Part  
Recipe Ingredient  
Recipe Assembly

Ingredient  
Measure  
Preparations (individual)  
Preparations (linked list of individual preparations)  
Course (linked list)

**Recipe Header (\* indicates a key field)**

Data Element	Description	Optional	Default
Recipe Number*	A five digit number assigned by the system	N	
Title	80 character text item naming the recipe	N	
Course	2 character abbreviation obtained from Course File	N	
Parts	1 digit number indicating number of parts to the recipe	N	1
Servings	2 digit number quantifying number of portions served	N	
Scalability	Boolean indicating whether ingredients are scalable	N	True

**Recipe Part**

Data Element	Description	Optional	Default
Recipe Number*	A five digit number assigned by the system	N	
Part*	1 digit number indicating the part of the recipe	N	1
Part Name	30 character description of part; only for more than 1	Y	
Servings	2 digit number quantifying servings or measure	N	
Measure	Weight or volume from Measure file	N	
Notes	Text item of variable length to assist chef	Y	

**Recipe Ingredient**

Data Element	Description	Optional	Default
Recipe Number*	A five digit number assigned by the system	N	
Part*	1 digit number indicating the part of the recipe	N	
Ingredient Number*	5 digit number from Ingredient File	N	
Amount	Number indicating quantity of Ingredient (as a range)	N	
Size	Number indicating the size of item (as a range)	Y	
Units	Descriptor associated with some ingredient types (enumerated list)( clove, head, spring, pinch, bunch, ...)	Y	
Preparation	Pointer to a linked list of preparation types	Y	
Modifier	One of (Small, Medium, Large ...)	Y	
Container	Enumerated list of container types (pkg, jar, can box, ..)	Y	
Measure	Weight or volume from Measure file	N	
Comment	30 character text	Y	
Alternate	Pointer to alternative Ingredient Record	Y	Null
Principal	Boolean Indicator of whether ingredient is a principal one	N	False

**Recipe Assembly**

Data Element	Description	Optional	Default
Recipe Number*	A five digit number assigned by the system	N	
Part*	1 digit number indicating the part of the recipe	N	
Sequence Number*	2 digit number generated by the system	N	
Instruction	Text ending with a period	N	

**Ingredient**

Data Element	Description	Optional	Default
Ingredient Code*	A five digit number assigned by the system	N	
Description	Text describing the ingredient	N	
Food Type	One from (grain, spice, fruit, vegetable, meat, fish, ...)	N	
Nutritional Values	To be added later	N	

**Measure**

Data Element	Description	Optional	Default
Measure Code*	A character code	N	
Description	Text describing the weight or volume	N	

**Preparations (Individual)**

Data Element	Description	Optional	Default
Preparation*	One from among (washed, boiled, mashed, fried, ...)	N	

**Preparations (linked list)**

Data Element	Description	Optional	Default
Preparation*	One from among (washed, boiled, mashed, fried, ...)	N	
Pointer	To next preparation		
Pointer	To previous preparation		

**Course**

Data Element	Description	Optional	Default
Course Code*	2 Character Code describing a course type	N	
Course Description	One from among (soup, appetizer, entrée, bread, ...)	N	

Fig. 3

**Recipe Header**

Data Element	Description
Recipe Number*	12345 (a number assigned by the system)
Title	Bruce's Variation on Odd Flavor Chicken
Course	EN (for entrée)
Parts	3
Servings	4
Scalability	Y

**Fig. 7****Recipe Part**

Recipe #	Part	Part Name	Servings	Measure	Notes
12345	1	Main	4		This dish can be prepared beforehand. The chicken can be cooked the day before, cleaned and cut an hour or so before dinnertime, arranged over lettuce on the platter and left in the refrigerator. The two groups of ingredients for the sauce can be assembled and placed in a bowl and saucepan respectively. The final preparation takes but a few minutes. Since this dish is served cold, it is especially good for summer days. The original Chinese name is Odd Flavor Chicken, because it uses such a variety of ingredients
12345	2	Sauce Group A	4		
12345	3	Sauce Group B	4		

**Fig. 4****Recipe Assembly**

Recipe #	Part	Sequence #	Text
12345	1	1	Wash and clean the chicken.
12345	1	2	Bring 3 quarts of water to boil in a large, deep pan.
12345	1	3	Submerge the chicken in the boiling water for 15 minutes.
12345	1	4	Turn off the flame and let the chicken cool in the water for at least 20 minutes before taking it out.
12345	1	5	Remove all skin and bones from chicken.
12345	1	6	Break into bite sized pieces and place in refrigerator.
12345	1	7	Wash, shred and arrange the lettuce leaves on a large platter.
12345	1	8	Arrange the chicken over the lettuce.
12345	1	9	Pour the warm sauce (see parts 2 and 3) over the chicken and serve.
12345	2	1	To prepare the sauce, combine the ingredients in Group A in a bowl and let stand for at least 5 minutes.
12345	3	1	In a small pan over a low flame heat the Group B ingredients for about 3 minutes.
12345	3	2	Then pour B into the bowl containing A.
12345	3	3	Mix well.
12345	3	4	The sauce is now ready to pour over the chicken.

**Fig. 5**

# Recipe Ingredients

Recipe	Part	Ingredient	Amount	Size	Units	Preparation	Modifier	Container	Measure	Comment	Alternate	Principal
12345	1	Chicken	1	2-3					Lbs			Y
12345	1	Lettuce	1		Head							N
12345	2	Soy Sauce	4						TB			N
12345	2	Honey	2						TB			N
12345	2	Garlic	1		Clove	Crushed						N
12345	2	Salt	1/2						Tsp			N
12345	3	Peanut Oil	3						TB		Corn Oil	N
12345	3	Corn Oil	3						TB		Peanut Oil	N
12345	3	Scallions	2			Chopped						N
12345	3	Ginger Root	4		Slices	Minced	Fresh					N
12345	3	Szechuen Peppercorn	1/2			Slightly Crushed			Tsp			N
12345	3	Dried Red Pepper	1/4			Crushed			Tsp			N

Note: Italicized columns appear in the data base in coded form; they are shown here in uncoded form for the sake of clarity

Fig. 6